CLAIMS

1. A disc drive adapted to a disk cartridge that includes: a disk; a body to contain the disk; a window, which is provided for the body so as to allow a data reading and/or writing head to access the disk; a shutter for opening or closing the window; and a rotational member, which includes a gear as a part of its outer periphery and which rotates to open or close the shutter, the disk drive comprising:

a motor for spinning the disk;

a holding portion for holding the disk cartridge so as to allow the motor to spin the disk;

the data reading and/or writing head, which is movable almost along the radius of the disk that is held on the holding portion; and

a shutter driving mechanism for opening and closing the shutter by rotating the rotational member of the disk cartridge,

wherein the shutter driving mechanism includes a driving gear, which engages with the gear of the rotational member and which turns around a first rotation shaft, the first rotation

shaft swinging around the center of rotation of the rotational member of the disk cartridge that is held on the holding portion.

2. The disc drive of claim 1, wherein the rotational member of the disk cartridge includes first and second notches, which are defined along the outer periphery so as to interpose the gear between them, and wherein the shutter driving mechanism further includes first and second lever portions that engage with the first and second notches, respectively.

3. The disc drive of claim 2, wherein the shutter driving mechanism is able to swing around the center of the rotational member of the disk cartridge.

4. The disc drive of claim 2 or 3, wherein the first and second lever portions transmit rotational driving force to the rotational member while swinging around the center of rotation of the rotational member.

5. The disc drive of one of claims 2 to 4, wherein the first and second lever portions form integral parts of a single driving lever.

6. The disc drive of claim 5, wherein the driving lever is rotatable around the first rotation shaft.

7. The disc drive of one of claims 1 to 6, wherein the driving gear includes a big gear and a small gear, which is provided coaxially with the big gear and which turns synchronously with the big gear, and wherein the shutter driving mechanism further includes a front gear engaging with the small gear.

8. The disc drive of claim 7, wherein the pitch diameter of the front gear is larger than that of gear teeth of the rotational member.

9. The disc drive of one of claims 1 to 8, wherein the driving gear is an intermittent gear, which has no gear teeth

where the driving gear does not engage with the gear of the rotational member.

10. The disc drive of one of claims 1 to 9, wherein in reading or writing no data from/on the disk, the disk drive controls the shutter driving mechanism so as to close the shutter.

11. The disc drive of one of claims 2 to 10, wherein the shutter driving mechanism further includes:

a holder for holding together the driving gear, the first lever portion and the second lever portion; and

a base for supporting the holder so as to allow the holder to swing around the center of rotation of the rotational member, the base being movable almost along the radius of the disk.

12. The disc drive of claim 11, wherein the front gear is an internal gear, which is secured to the base so as to turn around the center of rotation of the rotational member.

13. The disc drive of claim 11 or 12, wherein the base has a cam groove, at least one of the first and second lever portions having a protrusion that interlocks with the cam groove.

14. The disc drive of one of claims 11 to 13, wherein the holder is driven by a driving portion that shifts substantially parallel to a side surface of the body, the side surface having a window to partially expose the rotational member.

15. The disc drive of one of claims 1 to 14, further comprising a traverse chassis with a guide for guiding the head almost along the radius of the disk, wherein the head is supported on the guide and the motor is fixed on the traverse chassis.

16. The disc drive of claim 15, further comprising a driving plate for lifting or lowering the traverse chassis.

17. The disc drive of claim 16, wherein the traverse chassis has a protrusion and the driving plate has a cam groove that fits with the protrusion, and wherein the driving plate shifts substantially parallel to the side surface of the body, thereby lifting or lowering the traverse chassis.

18. The disc drive of claim 17, wherein the driving portion is a protrusion provided on the driving plate.